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| 10/712,367 | 11/12/2003 | Sumant Kamboj | 004.0109C1 | 1170 |

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| EXAMINER |
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| ART UNIT | PAPER NUMBER |
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1755

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,367

Applicant(s)

KAMBOJ, SUMANT

Examiner

Michael A. Marcheschi

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30,35,37-43,48 and 50-53 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 30,35,37-43,48 and 50-53 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/14/05 has been entered.

Claim 50 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 50 is indefinite because it depends on a canceled claim.

Claim 30, 35, 37-43, 48 and 50-53 are rejected under 35 U.S.C. 103(a) as obvious over James et al. in view of Bruxvoort et al., and Newell.

The teachings according to the references are defined in the previous office action which are incorporated herein by reference.

James teaches an abrasive article (has a polishing surface) that comprises a resin matrix and abrasive particles dispersed throughout as well as, a filler, wherein the polishing article has a grooved working surface. The resin matrix comprises an epoxy resin and a curing agent, as implied by column 5, lines 60-62. Although the reference does not define the filler in terms of hardness, the reference states that fillers can be added and it is the examines position that the

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skilled artisan would have appreciated that any filler known for abrasive articles can be used. Since Bruxvoort et al. teach talc, etc. (claimed hardness) are a well known fillers for abrasive articles, it is the examiners position that the skilled artisan would have appreciated the use of this (these) specific filler(s). In addition, the substitution of one filler for another that is to be used for the same purpose is clearly within the scope of the skilled artisan. With respect to the amounts of components (abrasive, filler and resin), the primary reference teaches amounts and/or ratios and when these amounts and/or ratios are calculated in the manner of the instant claimed (i.e. what the amounts are based on), it is the examiners position that said amounts will encompass the claimed ranges and/or limitations and therefore the claimed amounts are obvious. With respect to the limitation of grooves, the primary reference clearly shows this. With respect to the window limitation, it is the examiners position that it would have been obvious to fabricate the polishing article according to James et al. with windows therein in order to provide a mechanism for visual inspection and monitoring of the surface to be polished, as shown by Newell. With respect to the use of a curing agent and claimed amount, the primary reference suggests a curing agent as defined above. In the alternative, it is the examiners position that the use of a curing agent would have been well within the level of ordinary skill in the art in order to optimize the time needed for curing. The amount required is also within the scope of the skilled artisan to optimize the curing reaction. With respect to the thickness, the manufacture of the article according to the primary reference into any thickness, depending on its use, is obvious to the skilled artisan.

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Claims 30, 35, 37-43, 48 and 50-53 are rejected under 35 U.S.C. 103(a) as obvious over Charvat (589) in view of James et al., Bruxvoort et al., Shamouillan et al. and Newell.

The teachings according to the references are defined in the previous office action which are incorporated herein by reference.

Charvat teaches a polishing article (can be in the form of any abrasive article-see column 20, which has a polishing surface) that comprises a fixed abrasive comprising resin matrix and abrasive particles dispersed throughout, as well as fillers. The resin matrix comprises an epoxy resin and a curing agent. With respect to the filler, the primary reference teaches that a filler can be used (claimed hardness). With respect to talc, etc. it is the examiners position that the skilled artisan would have appreciated that any filler known for abrasive articles can be used. Since Bruxvoort et al. teach talc, etc. (claimed hardness) are a well known fillers for abrasive articles, it is the examiners position that the skilled artisan would have appreciated the use of this (these) specific filler(s). In addition, the substitution of one filler for another that is to be used for the same purpose is clearly within the scope of the skilled artisan. With respect to the amounts of components (abrasive, filler and resin), the primary reference teaches the amount of abrasive. The filler and organic material (binder) amounts would have been obvious because (1) James et al. teaches that these are conventional filler and organic material (binder) amounts when used to make abrasive articles and (2) it is the examiners position that since the primary reference fails to mention any specific concentration (criticality), this (the absence of any such limitations) implies that conventional amounts can be used, as would have been appreciated by the skilled artisan. With this being obvious, the primary reference, when combined with James et al., teaches amounts and/or ratios and when these amounts and/or ratios are calculated in the manner of the

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instant claimed (i.e. what the amounts are based on), it is the examiners position that said amounts will encompass the claimed ranges and/or limitations and therefore the claimed amounts are obvious. With respect to the limitation of conduits, it is the examiners position that it would have been obvious to fabricate a plurality of conduits, as shown by Shamouillan et al., in the polishing article according to the primary reference in order to optimize the delivering of a fluid (i.e. polishing slurry, lubricant, etc). at the interface of the article and substrate to be polished. The use of conduits will continuously supply the fluid in a homogeneous manner relative to the interface. Any optimization of fluid delivery is well within the level of ordinary skill in the art. With respect to the window limitation, it is the examiners position that it would have been obvious to fabricate the polishing article according to the primary reference with windows therein in order to provide a mechanism for visual inspection and monitoring of the surface to be polished, as shown by Newell. With respect to the amount of curing agent, although the primary reference does not define this, it is the examiners position that the amount required is well within the scope of the skilled artisan. With respect to the thickness, the manufacture of the article according to the primary reference into any thickness, depending on its use, is obvious to the skilled artisan. With respect to the method claims, the primary reference states that "other tools" can be formed and this makes obvious polishing pads, as shown by James et al., thus making the claimed method obvious (conventional method).

Claims 30, 35, 37-43, 48 and 50-53 are rejected under 35 U.S.C. 103(a) as obvious over Charvat (420) in view of James et al., Bruxvoort et al. Shamouillan et al. and Newell.

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The teachings according to the references are defined in the previous office action which are incorporated herein by reference.

Charvat teaches a polishing article that comprises a molded abrasive article comprising resin matrix and abrasive particles dispersed throughout, as well as fillers. The resin matrix comprises an epoxy resin and a curing agent. With respect to the filler, the primary reference teaches that a filler can be used (claimed hardness). With respect to talc, etc. it is the examiners position that the skilled artisan would have appreciated that any filler known for abrasive articles can be used. Since Bruxvoort et al. teach talc, etc. (claimed hardness) are a well known fillers for abrasive articles, it is the examiners position that the skilled artisan would have appreciated the use of this (these) specific filler(s). In addition, the substitution of one filler for another that is to be used for the same purpose is clearly within the scope of the skilled artisan. With respect to the amounts of components (abrasive, filler and resin), the primary reference teaches the amount of abrasive. The filler and organic material (binder) amounts would have been obvious because (1) James et al. teaches that these are conventional filler and organic material (binder) amounts when used to make abrasive articles and (2) it is the examiners position that since the primary reference fails to mention any specific concentration (criticality), this (the absence of any such limitations) implies that conventional amounts can be used, as would have been appreciated by the skilled artisan. With this being obvious, the primary reference, when combined with James et al., teaches amounts and/or ratios and when these amounts and/or ratios are calculated in the manner of the instant claimed (i.e. what the amounts are based on), it is the examiners position that said amounts will encompass the claimed ranges and/or limitations and therefore the claimed amounts are obvious. With respect to the limitation of conduits, it is the

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examiners position that it would have been obvious to fabricate a plurality of conduits, as shown by Shamouillan et al., in the polishing article according to the primary reference in order to optimize the delivering of a fluid (i.e. polishing slurry, lubricant, etc). at the interface of the article and substrate to be polished. The use of conduits will continuously supply the fluid in a homogeneous manner relative to the interface. Any optimization of fluid delivery is well within the level of ordinary skill in the art. With respect to the window limitation, it is the examiners position that it would have been obvious to fabricate the polishing article according to the primary reference with windows therein in order to provide a mechanism for visual inspection and monitoring of the surface to be polished, as shown by Newell. With respect to the amount of curing agent, although the primary reference does not define this, it is the examiners position that the amount required is well within the scope of the skilled artisan. With respect to the thickness, the manufacture of the article according to the primary reference into any thickness, depending on its use, is obvious to the skilled artisan. With respect to the method claims, the primary reference states that "other tools" can be formed and this makes obvious polishing pads, as shown by James et al., thus making the claimed method obvious (conventional method).

Claims 30, 35, 37-43, 48 and 50-53 are rejected under 35 U.S.C. 103(a) as obvious over Bruxvoort et al. in view of James et al., Shamouillan et al. and Newell.

The teachings according to the references are defined in the previous office action which are incorporated herein by reference.

Bruxvoort et al. teaches a polishing article that comprises a molded abrasive article comprising resin matrix and abrasive particles dispersed throughout, as well as fillers. The resin

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matrix comprises an epoxy resin and a curing agent. With respect to the filler, the primary reference clearly defines this. With respect to the amounts of components (abrasive, filler and resin), the primary reference teaches all of said amounts except the filler amount. The filler amount would have been obvious because (1) James et al. teaches that this a conventional filler amounts when used to make abrasive articles and (2) it is the examiners position that since the primary reference fails to mention any specific concentration (criticality), this (the absence of any such limitations) implies that conventional amounts can be used, as would have been appreciated by the skilled artisan. With this being obvious, the primary reference, when combined with James et al., teaches amounts and/or ratios and when these amounts and/or ratios are calculated in the manner of the instant claimed (i.e. what the amounts are based on), it is the examiners position that said amounts will encompass the claimed ranges and/or limitations and therefore the claimed amounts are obvious. With respect to the limitation of conduits, it is the examiners position that it would have been obvious to fabricate a plurality of conduits, as shown by Shamouillan et al., in the polishing article according to the primary reference in order to optimize the delivering of a fluid (i.e. polishing slurry, lubricant, etc). at the interface of the article and substrate to be polished. The use of conduits will continuously supply the fluid in a homogeneous manner relative to the interface. Any optimization of fluid delivery is well within the level of ordinary skill in the art. With respect to the window limitation, it is the examiners position that it would have been obvious to fabricate the polishing article according to the primary reference with windows therein in order to provide a mechanism for visual inspection and monitoring of the surface to be polished, as shown by Newell. With respect to the amount of curing agent, although the primary reference does not define this, it is the examiners position that

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the amount required is well within the scope of the skilled artisan. With respect to the thickness, the manufacture of the article according to the primary reference into any thickness, depending on its use, is obvious to the skilled artisan.

Claims 30, 35, 37-43, 48 and 50-53 are rejected under 35 U.S.C. 103(a) as obvious over Narayanan et al. in view of James et al., Bruxvoort et al., Shamouillan et al. and Newell.

Narayanan et al. teaches a polishing article that comprises a molded abrasive article comprising resin matrix and abrasive particles dispersed throughout, as well as fillers. The resin matrix comprises an epoxy resin. With respect to the filler, the primary reference clearly defines that one can be added (i.e. other friable fillers). With respect to filler having the claimed hardness (talc, etc.) it is the examiners position that the skilled artisan would have appreciated that any filler known for abrasive articles can be used. Since Bruxvoort et al. teach talc, etc. (claimed hardness) are a well known fillers for abrasive articles, it is the examiners position that the skilled artisan would have appreciated the use of this (these) specific filler(s). In addition, the substitution of one filler for another that is to be used for the same purpose is clearly within the scope of the skilled artisan. With respect to the amounts of components (abrasive, filler and resin), the primary reference teaches the amount of abrasive and filler. The organic material (binder) amounts would have been obvious because (1) James teaches that this is a conventional organic material (binder) amount when used to make abrasive articles and (2) it is the examiners position that since the primary reference fails to mention any specific concentration (criticality), this (the absence of any such limitations) implies that conventional amounts can be used, as would have been appreciated by the skilled artisan. With this being obvious, the primary

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reference, when combined with James et al., teaches amounts and/or ratios and when these amounts and/or ratios are calculated in the manner of the instant claimed (i.e. what the amounts are based on), it is the examiners position that said amounts will encompass the claimed ranges and/or limitations and therefore the claimed amounts are obvious. With respect to the limitation of conduits, it is the examiners position that it would have been obvious to fabricate a plurality of conduits, as shown by Shamouillan et al., in the polishing article according to the primary reference in order to optimize the delivering of a fluid (i.e. polishing slurry, lubricant, etc). at the interface of the article and substrate to be polished. The use of conduits will continuously supply the fluid in a homogeneous manner relative to the interface. Any optimization of fluid delivery is well within the level of ordinary skill in the art. With respect to the window limitation, it is the examiners position that it would have been obvious to fabricate the polishing article according to the primary reference with windows therein in order to provide a mechanism for visual inspection and monitoring of the surface to be polished, as shown by Newell. With respect to the thickness, the manufacture of the article according to the primary reference into any thickness, depending on its use, is obvious to the skilled artisan. With respect to the use of a curing agent and claimed amount, although the primary reference does not define this, it is the examiners position that the use of a curing agent would have been well within the level of ordinary skill in the art in order to optimize the time needed for curing. The amount required is also within the scope of the skilled artisan. With respect to the method claims, the primary reference states that "other tools" can be formed and this makes obvious polishing pads, as shown by James et al., thus making the claimed method obvious (conventional method).

Applicant's arguments filed 9/14/05 have been fully considered but they are not persuasive.

Applicant states that the features of each reference has previously been addressed and incorporates the arguments by reference into the instant response. The examiner acknowledges this and has previously addressed applicants remarks in the last office actions and thus any of the comment made therein are incorporated herein by reference.

Applicant focuses the remarks to James and states that the amount of the resin and filler in the James reference does not meet the claimed criteria (applicants arguments in the first paragraph of page 9 of the response). To support this, applicant provides a calculation. The examiner acknowledges the calculation, however, the calculation is based on a matrix that **only** includes a resin and a filler. It is extremely clear that the matrix of the reference can also include **a high modulus phase (see column 3-rigid organic or metal oxide) in combination with a resin** (at the defined ratio-see column 3, lines 36-38). In view of this, how can the calculation show any distinction if it does **not** take into consideration the high modulus phase that can be present as defined by the reference? Finally, applicant states that the claimed relationship is important, yet no clear evidence of criticality is defined and applicant has not compared the claimed invention with the article of the above reference. In summary, the matrix does not only contain a resin phase but also contains another phase and applicants calculation is not based on this combination.

As a comment on the examiners remarks above (which were defined in the advisory action) it is stated that the high modulus phase does not constitute either the epoxy resin or filler, as claimed. The examiner realizes this, but applicant's calculation is only based on these

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components (resin and filler) but it does not take into consideration the high modulus phase that is present as defined by the reference. Applicant has not clearly shown that the amount of resin in relation to the filler of the reference (when calculated based on the amount of filler and amount of high modulus phase) is outside the claimed range. For example, assuming 100 grams of the matrix (matrix comprises both a high and low modulus phase, as well as a filler) and the filler is present in an amount of at most 80%, thus the filler can be no more than 80 grams of the matrix and the high/low modulus phase can be no less than 20 grams of the matrix. Assuming the matrix to be 20 grams and the high modulus/low modulus phase ratio is 1:1 (within the reference teaching), then the low modulus phase (i.e. resin) is 10 grams. 10 grams (amount of resin) is 12.5% of 80 grams (amount of filler), thus the resin amount in relation to the filler of the reference reads on the claimed amount. Finally, applicant appears to argue that the claimed relationship is important, yet no clear evidence of criticality is defined.

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

A reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. *In re Opprecht* 12 USPQ 2d 1235, 1236 (CAFC 1989); *In re Bode* USPQ 12; *In re Lamberti* 192 USPQ 278; *In re Bozek* 163 USPQ 545, 549 (CCPA 1969); *In re Van Mater* 144 USPQ 421; *In re Jacoby* 135 USPQ 317; *In re LeGrice* 133 USPQ 365; *In re Preda* 159 USPQ 342 (CCPA 1968). In addition, "A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See *In re Van Marter*, 144 USPQ 421.

A generic disclosure renders a claimed species prima facie obvious. *Ex parte George* 21 USPQ 2d 1057, 1060 (BPAI 1991); *In re Woodruff* 16 USPQ 2d 1934; *Merk & Co. v. Biocraft Lab. Inc.* 10 USPQ 2d 1843 (Fed. Cir. 1983); *In re Susi* 169 USPQ 423 (CCPA 1971).

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness, see *In re Malagari*, 182 U.S.P.Q. 549; *In re Wertheim* 191 USPQ 90 (CCPA 1976).

Evidence of unexpected results must be clear and convincing. *In re Lohr* 137 USPQ 548. Evidence of unexpected results must be commensurate in scope with the subject matter claimed. *In re Linder* 173 USPQ 356. To establish unexpected results over a claimed range, applicants should compare a sufficient number of tests both inside and outside (i.e. as well as the upper and lower limits) the claimed range to show the criticality of the claimed range. *In re Hill* 284 F.2d 955, 128 USPQ 197 (CCPA 1960).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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MM



Michael A. Marcheschi
Primary Examiner
Art Unit 1755